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FINAL REPORT

Contract No. FA-67-WAI-129

Project No. 197-641-01R

CLIMATOLOGICAL SUMMARIES

VISIBILITIES BELOW 1/2 MILE
AND CEILINGS BELOW 200 FEET

Volume 20

LOS ANGELES, CALIFORNIA
INTERNATIONAL AIRPORT

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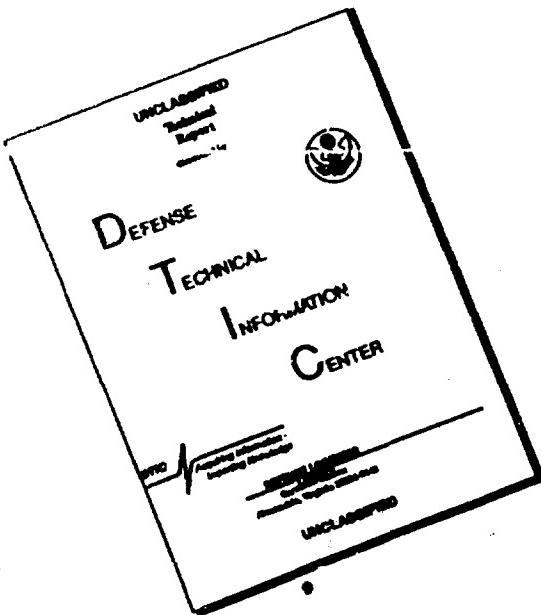
U.S. DEPARTMENT OF COMMERCE
Environmental Science Services Administration
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CLIMATOLOGICAL SUMMARIES

**VISIBILITIES BELOW 1/2 MILE
AND CEILINGS BELOW 200 FEET**

JUNE 1969

This report has been prepared by U.S. DEPARTMENT OF COMMERCE, Environmental Science Services Administration, Environmental Data Service, National Weather Records Center, Asheville, N.C. for the Systems Research and Development Service, Federal Aviation Administration, under Contract No. FA-67-WAI-129. The contents of this report reflect the views of the contractor, who is responsible for the facts and the accuracy of the data presented herein, and do not necessarily reflect the official views or policy of the FAA. This report does not constitute a standard, specification or regulation.

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Each with four sections:

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1. 0700-1359 Local Standard Time	
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3. 2200-0659 Local Standard Time	
4. All Hours	
XII All conditions.	20
XIII Temperature less than 33° F.	21
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INTRODUCTION

The tables contained herein have been prepared and organized for use in evaluating the cost/benefits of all weather landing systems and fog dissipation techniques. Thus, the time intervals of duration of the categories of weather are significant in determining the times of the delay, diversion or cancellation of an aircraft flight resulting from a restricted weather category. This information together with the number and types of aircraft affected by the restricted weather and the costs of a delay, diversion or cancellation combine to provide the total costs resulting from the weather restrictions.

Climatological summaries have been prepared for 41 airports. Their location and associated volume numbers are listed in Table A.

ENVIRONMENT AND INSTRUMENTATION

LOS ANGELES, CALIFORNIA INTERNATIONAL AIRPORT

The Los Angeles International Airport is situated on a triangular plain bounded on the north and east by the Coastal Range and on the southwest by the Pacific Ocean. The airport is about 11 miles southwest of the main business district of the city of Los Angeles. The Coastal Range (which varies in height from about 4000 to 11500 feet above MSL) extends west-northwest to east-southeast about 30 miles north of the airport and then curves to the south about 100 miles east. The Puente Hills, about 25 miles to the east, rise to 2000 feet above MSL and the Santa Ana Mountains, 30 miles to the southeast, rise to about 5000 feet. The Santa Monica Hills, 12 miles north of the airport, have elevations of almost 2000 feet and the Palos Verdes Hills, 11 miles to the south, have maximum elevations of about 1500 feet above MSL. Near the airport are the Baldwin Hills (4 miles north-northeast) with elevations of about 600 feet above MSL, and a low range of hills about 4 miles east with elevations to 250 feet. The field itself slopes slightly upward from the southeast to the northwest.

The tables in this publication are based on the 10-year period, January 1, 1956-December 31, 1965. Ceiling heights were measured by ceilometer throughout the period. Transmissometers (500 ft. baseline) were commissioned on runway 25 December 1, 1956 on runway 24 October 23, 1963, and on runway 06 November 18, 1963. Location of the airport weather station, its elevation, and the height of wind instrumentation during the period were as follows:

<u>From</u>	<u>To</u>	<u>Lat. N.</u>	<u>Long. W.</u>	<u>Height of Wind Instrument Feet above ground</u>	<u>Station Elevation Feet above MSL</u>
1- 1-56	9-18-59	33° 56'	118° 23'	59	99
9-19-59	12-31-65	33° 56'	118° 23'	20	99

NATURE OF DATA

The data used in the preparation of the climatological tables were extracted from 10 years of WBAN 10-A forms from January 1956 through December 1965. There were two exceptions: The data for Dulles International covered the period January 1963 through December 1965 and for Kansas City-Mid-Continent the period July 1957 through December 1965. All data (Record, Special, Local, Check observations)* were recorded on punched cards to the hour and minute whenever a change occurred in the ceiling, surface visibility, present weather, runway visual range or runway visibility during the time the ceiling was less than 200 feet and/or the surface visibility was less than 1/2 mile. The observation which ended a category of the above conditions was punched and if this observation was not a Record observation, the next Record observation was punched. The elements transcribed were: the time in hours and minutes, ceiling, surface visibility, tower visibility, present weather, temperature, dew-point, surface wind, altimeter setting and remarks concerning runway visual range and runway visibility.

These data should prove to be a valuable source for additional studies where low visibilities are considered.

Runway visual range (RVR) is the operational weather criteria for airport landing systems. The limits of visibility conditions for categories of aircraft operations are presented in Table B. Only Cat. II criteria are currently operational. Because RVR as such, is not available on a uniform basis for the station and period of record under study, visibilities and ceilings were used for delineating categories of weather minimums for landing and take-off operations. The determination of RVR would require:

1. The light setting of the edge lights,
2. the background lighting,
3. the location with respect to runway,
4. a special analyzer to integrate the transmissiometer readings etc.

This information has not often been recorded with the transmissiometer data.

* Except Kansas City - Mid-Continent. Only Record (hourly) observations were taken during the period of record at this station; 16 hours per day (0700-2200) through November 1957 and 24 hours per day December 1957 through December 1965.

EXPLANATION OF TABLES

All the tables of climatological summaries except Table I are based on the reported visibilities of less than 1/2 mile and/or ceilings less than 200 feet.

The tables of climatological summaries in these publications include:

- (1) reported visibility and ceiling values versus time intervals of duration.
- (2) weather categories of aircraft landing systems based on their relationship to ceiling and visibility as presented in Table C, versus intervals of duration. This is Table X only.
- (3) percentage frequency of wind direction versus wind speed for each category of aircraft landing system using the relationship of Table C for Record observations only. These are presented for 13 stations only. This is Table XI only.*
- (4) weather categories of landing systems based on their relationship to ceilings and visibility as presented in Table E, versus intervals of duration. These tables are also summarized on the basis of wind speed and temperature values.

* These stations are:

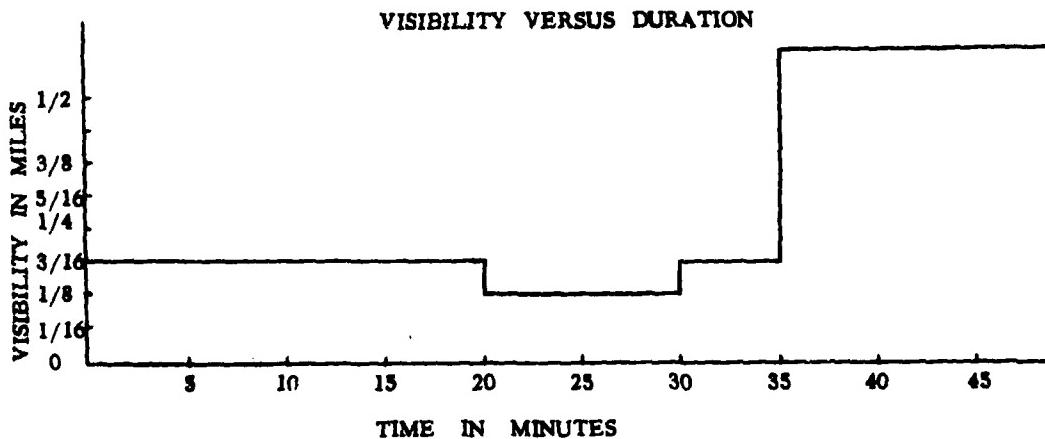
Los Angeles International, Oakland International, Chicago O'Hare, San Francisco International, Greater Buffalo International, Washington National, Washington Dulles International, Atlanta, Newark, New York J. F. K., Philadelphia International, New York La Guardia, Cleveland Hopkins International

REPORTED VISIBILITY AND CEILING VALUES VERSUS INTERVALS OF DURATION

Nine summaries are presented. In Tables I - V the values represent the individual incidents of specified ceiling and visibility. Thus, in Table III 3/8 mile visibility with 100 ft. ceiling occurs with a specific frequency for each interval of duration.

In Tables VI to IX, the frequency of occurrence represents visibilities for specific conditions of ceilings at or below the listed visibility. They are cumulative incidents wherein the total time at or below a certain visibility value for the ceiling value specified is considered as one incident. Thus, if in Table VII there are 172 incidents of 3/8 mile in the interval of 1-15 minutes, it represents 172 times during the 10-year period that visibilities 3/8 mile or less with ceilings 100 feet.

Another example which combines the entries in the individual and the cumulative tables is as follows: If visibility is distributed as shown in the figure, for ceiling 100 feet, if for 20 minutes the visibility was 3/16 then went to 1/8 for 10 minutes, then went to 3/16 for 5 minutes and then to greater than 1/2 mile visibility in Table III there would be 2 counts for 3/16, one under 16-30 minutes and one under 1-15 minutes; and one count for 1/8 under 1-15 minutes; whereas, in the cumulative table for visibilities at or below a given visibility with 100-foot ceilings - Table VII in the 3/8, 5/16, 1/4 and 3/16 mile categories there would be one count under 31-45 minutes (actually 35 minutes) and one count in 1/8 mile category under 1-15 minutes (actually 10 minutes).



To estimate the total time of occurrence for a particular interval of time for the period of record one multiplies the average of time period by the frequency of occurrence of the specified conditions for this time period. Thus, if visibility of 3/8 mile with ceiling 100 feet (Table III) occurred 14 times between 16-30 minutes, the estimated total time would be 14×23 or 322 minutes.

WEATHER CATEGORIES OF AIRCRAFT LANDING SYSTEMS VERSUS INTERVALS OF DURATION BASED ON TABLE D

A single table (Table X) based on Table C for the period of record is presented. Table C is based on the current practices relating RVR to meteorological visibilities as shown in Table D.

Table X is in three sections:

Xa. Frequency of occurrence of the landing categories versus the indicated duration intervals:

In this summary Categories II, IIIa, IIIb, and IIIc are represented by the frequency of these conditions occurring during the specified intervals.

In Category II + III the frequency represents the visibilities and ceilings at or below Category II weather, i. e., below 200 feet and/or 1/2 mile for a continuous period of time.

In Category III, the number of occurrences represent the frequency the weather was in Category IIIa and IIIb/c i.e., observation below 1/4 mile and equal to and above 1/4 mile when the ceiling is reported as zero for a continuous period of time.

Xb. Total time in each duration versus the duration intervals in hours and tenths of hours. The entries in this table are arrived by adding the times in minutes associated with the frequencies above. These totals are converted to hours and tenths. This table also contains the percentage of time for the 10-year period of observations of specified duration intervals, i. e., 1-90, 91-all, 1-all. This table is derived by dividing the total time under each category for the specified duration interval by the total number of hours. Thus the percentage value for Category II + III the 1-all group (last column, 4th value down) represents the frequency of occurrence for the ten-year period in percent of visibility and ceilings below 1/2 mile and/or 200 feet.

Xc. Average time in each duration versus the duration intervals.

This table is derived by dividing the total time in minutes of each item in Table Xb by the frequency of occurrence in Table Xa.

WIND DIRECTION VERSUS SPEED BY PERCENTAGE FREQUENCY (Table XI)

Table XI (for 13 stations) (unnumbered on summaries) show the percentage distribution of the different categories in accordance with Table D by wind direction to 16 points versus specified speed intervals. These categories, II, IIIa and IIIb/c, are divided into 2100-0500 and 0600-2000 hour groups making a total of six sub-tables.

Only the hourly (Record) observations when Category II or below conditions exist are used in these summaries. The percentages are determined by dividing the number of hourly observations which were recorded during the entire period of record for the indicated hour group. The percentage figures can be combined to obtain percentages for the quadrants of different speed intervals.

WEATHER CATEGORIES OF LANDING SYSTEMS VERSUS INTERVALS OF DURATION BASED ON TABLE E

Nine tables XII - XXI are presented for the ten-year period. These tables are presented in three sections:

a. Frequency of occurrences of landing categories versus duration intervals:

Categories II, IIIa, IIIb, and IIIc are represented by the total time for the specified hour group that these conditions occur during the indicated intervals.

In Categories II + III the frequency represents the visibilities and ceilings at or below Category II weather e. g., below 2400 RVR. In Category III the frequency represents the visibilities at or below Category III weather e. g., below 1200 RVR.

b. Total time in each duration versus the duration intervals hours and tenths.

The entries in this table are derived by adding the time in minutes associated with the frequency above and converting them to hours and tenths.

c. Average time in each duration versus the duration intervals.

This table is derived by dividing the total time in minutes of each value in b by the corresponding frequency of occurrence in a.

In these tables, since the period of duration is the important element, each incident of weather is attributed to the hour group during which it began. Thus, if Category IIIa weather began in the 22-06 hour group and continued into the 07-13 hour group the total time is placed in the 22-06 group. It is probable, then, that the incidence of the various categories may be over-estimated in the 22-06 group. The totals appearing in the all hour group, however, are correct.

The sum of Categories IIIa, IIIb, and IIIc in the all-hour groups and sometimes in the other hour groups are frequently greater than under Cat. III. This results from the addition of 5% of observations of 3/16 mile or greater with ceiling 100 feet added to Cat. IIIa, whereas, this 5% is not included in the Cat. III totals at the bottom of each table.

The difference between Cat. III totals and the sum of Cat. IIIa, IIIb, and IIIc are subtracted from the Cat. II totals for the all-hour group and appears at the end of the Cat. II line with an asterisk. This value is a better estimate of the occurrence of Cat. II weather for the 10-year period.

EXPLANATION OF TABLE E

The relationship of RVR with light setting 5 for a 500' baseline to the meteorological report of visibility, based on the information in Circular N^{1/}, is given in Table F. This was the basis for establishing the relationships in Table E. The use of the highest setting for the edge lights for approaches in low visibility is the current operational practice. Although the selection of some of the relationships in Table E have been somewhat arbitrary, it can be expected that the observers report of low visibilities and ceilings will be more inexact than the cut off point of these relationships.

^{1/} Manual of Surface Observations (WBAN). Circular N, Weather Bureau, Washington, D. C. NAVAIR 501D503, July 1968 (AD672-366)

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This is one of 41 volumes of Report RD-69-22. The volumes are as follows:

<u>VOL.</u>	<u>CITY</u>	<u>AIRPORT</u>
1.	Anchorage, Alaska	International
2.	Atlanta, Georgia	Atlanta
3.	Baltimore, Maryland	Friendship International
4.	Birmingham, Alabama	International
5.	Boston, Massachusetts	General E. L. Logan International
6.	Buffalo, New York	Greater Buffalo International
7.	Burbank, California	Hollywood-Burbank
8.	Chicago, Illinois	O'Hare International
9.	Cincinnati, Ohio	Greater Cincinnati
10.	Cleveland, Ohio	Cleveland-Hopkins International
11.	Columbus, Ohio	Port Columbus International
12.	Dallas, Texas	Love Field
13.	Dayton, Ohio	James M. Cox Municipal
14.	Denver, Colorado	Stapleton International
15.	Detroit, Michigan	Detroit Metropolitan-Wayne County
16.	Hartford, Connecticut	Bradley International (Windsor Locks)
17.	Houston, Texas	William P. Hobby
18.	Indianapolis, Indiana	Weir Cook
19.	Kansas City, Missouri	Mid-Continent International
20.	Los Angeles, California	International
21.	Louisville, Kentucky	Standiford Field
22.	Miami, Florida	International
23.	Milwaukee, Wisconsin	General Mitchell Field
24.	Minneapolis, Minnesota	Minneapolis-St. Paul International
25.	Nashville, Tennessee	Metropolitan
26.	Newark, New Jersey	Newark
27.	New Orleans, Louisiana	International
28.	New York, New York	John F. Kennedy International
29.	New York, New York	La Guardia
30.	Oakland, California	Metropolitan Oakland International
31.	Philadelphia, Pennsylvania	International
32.	Pittsburgh, Pennsylvania	Greater Pittsburgh International
33.	Portland, Oregon	International
34.	Rochester, New York	Rochester-Mearns County
35.	St. Louis, Missouri	Lambert-St. Louis Municipal
36.	Salt Lake City, Utah	Municipal No. 1
37.	San Francisco, California	International
38.	Seattle, Washington	Seattle-Tacoma International
39.	Syracuse, New York	Clarence E. Hancock
40.	Washington, D. C.	Dulles International
41.	Washington, D. C.	National

TABLE A

LIMITS OF LANDING CATEGORIES

- * CAT. II Operations down to minima below 200 feet decision height and 2400 RVR and to as low as 100 feet decision height and 1200 RVR.
- ** CAT. IIIA Below 100 feet decision height and 1200 RVR and to as low as 50 feet decision height and 700 RVR.
- ** CAT. IIIB Below 700 RVR to 150 RVR.
- ** CAT. IIIC No external visual reference.

TABLE B

- * Current operational criteria
- ** Criteria not firm, used for planning purposes

CEILING AND VISIBILITY EQUIVALENTS FOR CATEGORIES
OF AIRCRAFT LANDING OPERATIONS CURRENT PRACTICE
CRITERIA for Table X and XI

Category II:	Visibility = 1/2 and ceiling = 100 Visibility = 3/8 and ceiling ≠ 0 Visibility = 5/16 and ceiling ≠ 0 Visibility = 1/4 and ceiling ≠ 0 Visibility = 1/4 and ceiling = 0
Category III-a:	Visibility = 3/16 and all ceilings Visibility = 1/8 and all ceilings
Category III-b/c:	Visibility = 1/16 and all ceilings Visibility = 0 and all ceilings
Category III:	The sum of IIIa, IIIb, and IIIc

TABLE C

RVR VERSUS VISIBILITY (Current Practice)

METEOROLOGICAL VISIBILITY	RVR EQUIVALENT
Statute Miles (feet)	Feet
3/16 (990 feet)	1200
* 1/4 (1320 feet)	1600
* 1/2 (2640 feet)	2400

TABLE D

* United States Standard for Terminal Instrument
Procedures (TERPs), Federal Aviation Agency, September 1966.

**CEILING AND VISIBILITY EQUIVALENTS FOR
CATEGORIES OF AIRCRAFT LANDING OPERATIONS**
Criteria for Tables XII-XXI

Category II
Below 2400 ft. RVR to
1200 ft. RVR

Equivalent Meteorological Observations

All observations with visibilities greater than
3/8 mile with ceiling 100 feet.

All observations of 3/8 mile with ceiling not
equal to zero.

All observations of 5/16 mile with ceiling not
equal to zero.

All observations of 1/4 mile with ceiling not
equal to zero.

All observations of 3/16 mile with ceiling not
equal to zero.

Category III
Category IIIa
Below 1200 ft. RVR to
700 ft. RVR

All observations of 1/8 mile.

All observations of 3/16 mile or greater with
zero ceiling.

5% of observations of 3/16 mile or greater with
ceiling 100.

Category IIIb
Below 700 ft. RVR to
150 ft. RVR

All observations of 1/16 mile.

50% of all observations of zero miles.

Category IIIc
Below 150 ft. RVR

50% of observations of zero miles.

TABLE E

RVR VERSUS METEOROLOGICAL VISIBILITY

Circular N

Reported Meteorological Visibilities Miles (feet)	RVR (500 ft. baseline) at Setting 5		Category
	Day	Night	
0 (less than 330 feet)	*	*	(IIIc and IIIb)
1/16 (330 feet-650 feet)	*	*	(IIIb)
1/8 (660 feet-980 feet)	1000-1400	*	(IIIb and IIIa)
3/16 (990 feet-1310 feet)	1400-1800	1200-1800	(Cat. II)
1/4 (1320 feet-1640 feet)	1800-2200	1800-2200	(Cat. II)

* No determination of RVR with respect to meteorological visibility.

TABLE F

LOS ANGELES, INTERNATIONAL
FREQUENCY OF INTERVALS OF DURATION VERSUS CATEGORIES OF VISIBILITIES

JANUARY 1966 - DECEMBER 1966

TABLE I. VISIBILITY < 1/2 MILE WHEN CEILING < 200 FEET.

	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
	24	13	9	4	1						

TABLE II. (IRRESPECTIVE OF CEILING).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	231	72	30	16	10	3	2				
9/16	99	27	9	5	2						
1/4	44	15	4	1							
3/16	219	81	25	12	9	1	2				
1/8	311	110	69	26	25	13	7	2			
1/16	150	50	57	36	41	19	17	8		3	
0	37	24	16	21	26	14	27	13	16	3	1

TABLE III. (CEILING 100 FEET).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	44	14	6	3	3	1					
9/16	17	5	3	1							
1/4	125	34	16	8	3	1					
3/16	100	42	19	7	4						
1/8	120	37	25	9	10	6	2				
1/16	37	26	19	3	8	4	2	2			
0	4	1	1								

TABLE IV. (CEILING ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	1	2									
9/16											
1/4	15	6	1								
3/16	23	9	5	1							
1/8	106	42	16	8	11	3	1				
1/16	104	26	34	20	26	10	12	6	3	3	1
0	31	26	19	20	23	14	29	11	15	3	

TABLE V. (CEILING 100 FEET OR ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	42	13	7	1	3	1					
9/16	18	5	3	1							
1/4	125	35	15	8	2	1	1				
3/16	121	53	20	8	5						
1/8	218	96	44	17	20	10	5	2			
1/16	124	79	50	30	27	16	14	7	5	3	1
0	33	27	20	40	23	14	29	11	15	3	

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT

TABLE VI. (IRRESPECTIVE OF CEILING).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	69	76	46	66	56	51	71	39	52	36	31
9/16	60	61	41	63	58	51	50	29	50	39	27
1/4	98	98	47	39	59	48	51	29	52	35	26
3/16	33	39	44	29	32	38	36	20	45	29	22
1/8	41	38	39	21	32	40	35	20	46	28	19
1/16	38	29	19	21	44	22	19	10	26	18	11
0	13	14	7	6	20	11	10	19	21	9	

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT

TABLE VII. (CEILING 100 FEET).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	172	113	56	36	43	19	18	3	7		
9/16	160	102	55	37	40	17	16	3	7		
1/4	167	99	35	35	40	16	15	4	6		
3/16	120	62	40	27	34	12	12	3	5		
1/8	100	63	32	16	18	13	7	4	6		
1/16	30	22	15	3	10	3	3	2	1		
0	1	1	1								

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSED AS ONE INCIDENT

TABLE VIII. (CEILING ZERO).

VISIBILITY	DURATION IN MINUTES										
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	66	76	51	29	51	49	46	26	47	19	15
9/16	55	71	50	30	45	45	41	20	45	19	15
1/4	61	59	49	26	44	44	39	20	44	19	15
3/16	52	57	52	26	47	46	39	20	42	17	13
1/8	54	44	50	26	35	39	31	20	38	16	10
1/16	51	43	28	17	26	22	20	10	30	9	11
0	10	20	12	11	10	11	21	14	10	9	

TABLE X
ALL SEASONS

LOS ANGELES, INTERNATIONAL

JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

CATEGORY	TIME IN MINUTES												I=ALL				
	1-15	16-30	31-45	46-60	61-80	81-120	121-180	181-240	241-360	361-480	481+	I=90	91-ALL				
II	445	161	89	42	37	17	15	5	776	37	811	776	37	811			
IIIA	290	156	75	46	52	19	16	2	5	1	617	63	640	617	63	640	
IIIB/C	70	60	31	27	52	25	29	26	27	12	10	240	129	369	240	129	369
III + III	59	67	42	45	69	56	73	31	51	34	33	282	276	558	282	276	558
III	78	74	50	31	63	36	46	34	45	25	17	296	203	499	296	203	499

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	TIME IN MINUTES												I=ALL	1-90	91-ALL	I=ALL	
	1-15	16-30	31-45	46-60	61-80	81-120	121-180	181-240	241-360	361-480	481+	I=90					
II	68.8	63.2	57.5	37.6	46.9	30.3	37.2	16.1	273.8	83.5	357.3	331	.10	.61	.31	.61	
IIIA	92.3	64.4	48.8	41.7	62.0	33.4	39.8	6.6	24.5	10.4	272.2	114.7	386.9	31	.13	.64	
IIIB/C	15.0	24.6	20.4	25.6	68.3	46.5	71.2	93.7	132.6	82.0	108.1	153.9	532.9	686.7	.18	.61	.78
III + III	10.5	26.9	26.8	39.6	89.3	88.3	178.1	107.0	292.7	237.1	368.0	189.1	1291.8	1630.9	.22	1.42	1.63
III	13.9	30.5	32.0	27.6	78.7	86.5	113.2	120.0	219.4	173.8	200.3	182.5	891.1	1073.7	.21	1.02	1.22

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY	TIME IN MINUTES												I=ALL			
	1-15	16-30	31-45	46-60	61-80	81-120	121-180	181-240	241-360	361-480	481+	I=90				
II	9.3	23.9	38.7	54.0	75.6	106.8	148.7	192.8	21.2	135.6	26.4	21.2	135.6	26.4		
IIIA	10.6	25.1	39.0	54.3	75.0	105.6	149.3	197.5	204.0	623.0	26.5	160.1	35.2	160.1	35.2	
IIIB/C	12.9	24.6	39.5	56.6	78.6	106.8	147.2	216.3	296.6	414.1	648.6	38.5	247.8	111.7	247.8	111.7
III + III	10.7	24.1	38.3	52.8	74.2	109.2	146.4	207.0	297.3	418.3	670.5	40.2	270.0	152.9	270.0	152.9
III	10.7	24.7	38.6	53.1	74.6	107.3	147.6	211.7	292.9	417.2	706.9	37.0	283.4	129.1	283.4	129.1

TOTAL OBSERVATION HOURS 87672

LOS ANGELES, INTERNATIONAL
WIND DIRECTION VERSUS SPEED BY PERCENTAGE FREQUENCY
JANUARY 1966 - DECEMBER 1968

TABLE XI

PERCENTAGE FREQUENCY OF OCCURRENCE												PERCENTAGE FREQUENCY OF OCCURRENCE												
CATEGORY	HOUR GROUP	WIND DIRECTION	Calm	SPEED (KNOTS)								CATEGORY	HOUR GROUP	WIND DIRECTION	Calm	SPEED (KNOTS)								
				1-5	6-10	11-15	16-20	21+	Total	1-5	6-10	11-15	16-20	21+	Total	1-5	6-10	11-15	16-20	21+	Total			
II	21-05	N	2.1						2.1	II	06-20	N					1.1					1.1		
		NNE	1.1						1.1			NNE					1.1					1.1		
		NE	0.2						0.2			NE					0.1					0.1		
		ENE	1.9	1.6					1.9			ENE					1.7					1.7		
		E	4.3	4.2					4.3			E					4.3					4.3		
		ESE	7.9	1.6					7.9			ESE					1.6					1.6		
		SE	5.0	1.6					5.0			SE					1.6					1.6		
		SSE	2.1	1.6					2.1			SSE					1.6					1.6		
		S	3.2	0.6					3.2			S					0.6					0.6		
		SW	1.1						1.1			SW					0.6					0.6		
		SW	1.1						1.1			SW					1.1					1.1		
		WSW	1.6	1.1					1.6			WSW					1.1					1.1		
		W	6.6	5.6					6.6			W					5.6					5.6		
		WNW	5.2	0.6					5.2			WNW					0.6					0.6		
		NNW	1.1						1.1			NNW					0.6					0.6		
		Calm	22.6						22.6			Calm					19.3					19.3		
		Total	22.6	58.9	16.6				100.0			Total					18.3	58.3	31.6	0.6		100.0		
	TOTAL RECORD OBSERVATIONS 190												TOTAL RECORD OBSERVATIONS 176											

PERCENTAGE FREQUENCY OF OCCURRENCE												PERCENTAGE FREQUENCY OF OCCURRENCE												
CATEGORY	HOUR GROUP	WIND DIRECTION	Calm	SPEED (KNOTS)								CATEGORY	HOUR GROUP	WIND DIRECTION	Calm	SPEED (KNOTS)								
				1-5	6-10	11-15	16-20	21+	Total	1-5	6-10	11-15	16-20	21+	Total	1-5	6-10	11-15	16-20	21+	Total			
IIIA	21-05	N	1.2	0.6					1.7	IIIA	06-20	N					2.3	3.0	0.6			2.3		
		NNE	1.7	0.6					2.1			NNE					3.0	3.0	0.6			3.0		
		NE	3.7						4.1			NE					0.6	0.6	0.6			0.6		
		ENE	4.6	1.6					5.8			ENE					7.6	8.0	0.6			7.6		
		E	10.6	3.6					10.1			E					8.0	8.0	0.6			8.0		
		ESE	9.6	3.6					10.0			ESE					8.0	8.0	0.6			8.0		
		SE	3.7	0.6					4.1			SE					4.3	4.3	0.6			4.3		
		SSE	2.1	0.6					2.5			SSE					0.6	0.6	0.6			0.6		
		S	2.3	0.6					2.9			S					0.6	0.6	0.6			0.6		
		SSW	1.7						1.7			SSW					0.6	0.6	0.6			0.6		
		SW	3.7						3.7			SW					3.0	3.0	0.6			3.0		
		WSW	0.7	0.6					1.1			WSW					3.0	3.0	0.6			3.0		
		W	6.7	2.0					7.2			W					3.0	3.0	0.6			3.0		
		WNW	4.1	1.6					5.6			WNW					3.0	3.0	0.6			3.0		
		NNW	1.7						1.7			NNW					1.7	1.7	0.6			1.7		
		Calm	20.3						20.3			Calm					19.2	31.3	31.1	1.6		19.2		
		Total	20.3	58.9	15.6				100.0			Total					19.2	31.3	31.1	1.6		100.0		
	TOTAL RECORD OBSERVATIONS 241												TOTAL RECORD OBSERVATIONS 132											

PERCENTAGE FREQUENCY OF OCCURRENCE												PERCENTAGE FREQUENCY OF OCCURRENCE												
CATEGORY	HOUR GROUP	WIND DIRECTION	Calm	SPEED (KNOTS)								CATEGORY	HOUR GROUP	WIND DIRECTION	Calm	SPEED (KNOTS)								
				1-5	6-10	11-15	16-20	21+	Total	1-5	6-10	11-15	16-20	21+	Total	1-5	6-10	11-15	16-20	21+	Total			
IIIB/C	21-05	N	1.6						1.6	IIIB/C	06-20	N					1.1					1.1		
		NNE	1.1						1.1			NNE					2.2					2.2		
		NE	1.3	0.6					1.9			NE					0.6					0.6		
		ENE	10.1						10.6			ENE					6.7					6.7		
		E	12.6	8.0					12.4			E					10.7	3.6				10.7		
		ESE	11.6	3.6					11.9			ESE					7.9	3.2				7.9		
		SE	7.1	1.6					7.2			SE					6.9	3.6				6.9		
		SSE	2.1	0.6					2.5			SSE					0.6	0.6				0.6		
		S	1.7						1.7			S					2.2					2.2		
		SSW	1.6						1.6			SSW					0.6	0.6				0.6		
		SW	2.2						2.2			SW					0.6	0.6				0.6		
		WSW	1.6	0.6					1.6			WSW					1.7	3.6				1.7		
		W	6.1	1.6					6.0			W					6.9	3.6				6.9		
		WNW	6.1	0.6					6.0			WNW					6.9	3.6				6.9		
		NNW	1.6						1.6			NNW					0.6	0.6				0.6		
		Calm	20.2						20.2			Calm					19.6	31.7	31.6	1.6		19.6		
		Total	20.2	57.6	15.0				100.0			Total					19.6	31.7	31.6	1.6		100.0		
	TOTAL RECORD OBSERVATIONS 517												TOTAL RECORD OBSERVATIONS 176											

LOS ANGELES, INTERNATIONAL																			
FREQUENCY OF OCCURRENCE		0700 - 1300 (28571 OBSERVATION HOURS)										JANUARY 1956 - DECEMBER 1965							
CATEGORY	1-15	TIME IN MINUTES																	
		31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL						
II	65	38	70	13	3	3	4				147	7	156						
IIIA	43	20	19	3	1	1					82	1	83						
IIIB	25	19	1	2	1						52		52						
IIIC	2	1	1	1	1						33	1	36						
II + III	7	12	3	4	5	1	4				33	3	36						
III	11	7	6	3	2	3	1				29	4	33						
TOTAL TIME IN EACH DURATION HOURS AND TENTHS																			
CATEGORY		TIME IN MINUTES																	
II	9.9	16.8	17.7	11.3	9.3	5.6	0.8				57.3	15.3	72.6						
IIIA	8.0	8.1	8.3	6.3	1.5	1.9					28.7	1.9	30.6						
IIIB	5.0	6.4	6.0	2.0	1.4						20.7		21.2						
IIIC	.6	.8	1.0								2.2	1.7	2.4						
II + III	1.1	3.0	2.9	3.4	8.4	1.6	0.7				18.8	11.2	30.0						
III	2.1	2.2	3.1	2.6	2.3	5.9	2.1				13.0	7.6	20.6						
AVERAGE TIME IN EACH DURATION HOURS AND TENTHS																			
CATEGORY		TIME IN MINUTES																	
II	9.2	23.3	38.0	92.1	70.3	111.2	146.3				23.4	131.1	28.3						
IIIA	11.1	24.2	39.1	54.2	90.0	115.0					21.0	115.0	22.1						
IIIB	12.0	25.4	40.1	59.3	85.0						23.8		24.3						
IIIC	11.8	26.7	39.3	58.3	100.0						26.4	100.0	23.8						
II + III	9.1	21.2	34.2	51.0	77.2	100.0	145.3				24.6	124.8	47.6						
III	11.6	19.1	37.2	51.3	69.5	110.7	186.0				20.8	114.3	37.5						
1400 - 2100 (29224 OBSERVATION HOURS)																			
CATEGORY		TIME IN MINUTES																	
II	66	33	18	10	13	6	5				138	11	149						
IIIA	47	19	10	7	4	4	2	1			57	7	64						
IIIB	4	2	2	2	2	3	1	2			62	11	73						
IIIC	13	19	8	13	15	10	13	2	10	1	18	64	56	118					
II + III	29	14	9	6	6	4	2	7	2	12	56	33	89						
TOTAL TIME IN EACH DURATION HOURS AND TENTHS																			
CATEGORY		TIME IN MINUTES																	
II	9.4	18.2	11.7	9.6	16.9	10.9	12.1	14.2	16.3	481+	1-90	91-ALL	1-ALL						
IIIA	7.9	8.7	6.7	8.4	10.9	10.9	12.0	14.0	16.0		59.5	22.9	82.0						
IIIB	7.5	9.6	3.6	8.3	8.4	9.6	7.0	19.8	13.3		32.7	16.1	46.6						
IIIC	.9	1.2	1.8	2.9	1.8	6.8	3.3	10.7	8.9		29.1	87.9	79.3						
II + III	2.2	6.0	5.2	11.4	18.8	17.6	32.3	7.0	48.8	7.6	235.0	43.3	248.2	391.5					
III	6.4	5.7	1.9	7.4	8.4	10.8	9.4	7.5	33.7	141.7		27.8	216.8	244.6					
AVERAGE TIME IN EACH DURATION HOURS AND TENTHS																			
CATEGORY		TIME IN MINUTES																	
II	8.0	22.8	38.9	55.0	78.2	104.7	146.4				29.9	122.6	33.0						
IIIA	10.2	25.0	39.4	56.4	73.0	104.5	136.3	240.0			22.2	138.3	29.8						
IIIB	12.9	22.7	41.4	36.0	83.7	112.5	139.0				28.1	261.3	63.2						
IIIC	12.6	23.0	37.3	53.7	86.3	107.5	139.4	199.0	320.0	411.0	630.0	41.3	237.8	126.5					
II + III	10.2	23.0	37.3	52.5	72.2	104.5	149.8	210.0	292.5	485.0	785.3	40.6	386.9	194.0					
III	10.6	24.6	38.3	53.6	85.5	108.0	141.3	223.5	288.7	412.0	708.3	29.8	394.2	184.2					
2200 - 0600 (92877 OBSERVATION HOURS)																			
CATEGORY		TIME IN MINUTES																	
II	262	110	67	36	37	16	17	5	2		512	40	552						
IIIA	231	66	49	22	21	16	9	2	1		409	20	437						
IIIB	115	66	50	37	47	23	27	14	8	2	335	74	405						
IIIC	32	12	7	8	11	6	11	7	1	1	31	21	32						
II + III	30	40	29	28	49	49	56	29	35	41	35	15	185	227	402				
III	63	43	41	20	42	37	38	23	38	10	1	211	137	366					
TOTAL TIME IN EACH DURATION HOURS AND TENTHS																			
CATEGORY		TIME IN MINUTES																	
II	63.0	42.5	62.3	33.0	44.6	29.1	42.2	16.0	11.1		208.2	98.9	307.2						
IIIA	69.2	36.7	32.3	20.2	28.5	29.1	23.4	4.6	5.2		130.4	22.7	216.4						
IIIB	26.9	37.3	34.3	32.7	40.7	42.2	40.9	40.5	40.0		192.2	22.3	213.3						
IIIC	7.8	10.9	9.9	10.5	11.1	13.3	20.0	21.3	34.8	7.0	34.4	105.3	134.7						
II + III	7.3	15.9	19.0	26.8	50.0	78.3	138.9	100.0	203.9	229.5	139.8	126.9	882.4	1005.4					
III	12.9	10.6	26.6	18.3	51.6	67.1	84.2	190.2	125.2	10.9	127.4	376.0	704.0						
AVERAGE TIME IN EACH DURATION HOURS AND TENTHS																			
CATEGORY		TIME IN MINUTES																	
II	10.0	22.1	35.0	55.9	89.2	109.2	121.3	180.0	241-360	361-480	481+	1-90	91-ALL	1-ALL					
IIIA	11.7	25.6	36.8	55.1	75.7	109.3	136.1	197.3	209.0			24.5	145.4	32.4					
IIIB	12.7	26.2	41.2	57.2	77.5	110.3	150.0	212.3	300.0	404.0		23.5	135.6	30.0					
IIIC	27.0	27.0	42.1	56.3	77.2	112.0	150.4	212.1	295.9	417.5		40.9	198.1	99.9					
II + III	11.2	23.8	39.3	53.2	73.4	110.7	148.6	204.0	298.4	417.5	335.1	41.2	246.0	150.7					
III	11.9	25.1	36.9	54.9	73.8	106.8	148.9	214.0	300.3	417.4	482.0	36.2	220.4	114.8					
ALL																			
CATEGORY		TIME IN MINUTES																	
II	63.1	70.8	72.7																

LOS ANGELES, INTERNATIONAL
TABLE XIII - TEMPERATURE < 33 DEGREES (F).
0700 - 1900 (23571 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

NO OCCURRENCE OF DATA

1400 - 2100 (29324 OBSERVATION HOURS)

NO OCCURRENCE OF DATA

FREQUENCY OF OCCURRENCE		2200 - 0600 (3677 OBSERVATION HOURS)													
		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													1	1	1
IIIA	1												2	2	
IIIB															
IIIC															
II + III															
III															

TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		.5											.5	.5	
IIIA	.5												1.4	1.4	
IIIB															
IIIC															
II + III															
III															

AVERAGE TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		30.0											30.0	30.0	
IIIA	19.0												42.5	42.5	
IIIB															
IIIC															
II + III															
III													100.0	100.0	100.0

FREQUENCY OF OCCURRENCE		ALL (187672 OBSERVATION HOURS)													
		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													1	1	
IIIA	1												2	2	
IIIB															
IIIC															
II + III															
III															

TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		.5											.5	.5	
IIIA	.5												1.4	1.4	
IIIB															
IIIC															
II + III															
III															

AVERAGE TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		30.0											30.0	30.0	
IIIA	19.0												42.5	42.5	
IIIB															
IIIC															
II + III															
III													100.0	100.0	100.0

TABLE XIV - TEMPERATURE < 33 DEGREES (F.), WITH FOG, NO PRECIPITATION, AND WIND < 9 KNOTS.
0700 - 1300 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

NO OCCURRENCE OF DATA

1400 - 2100 (29224 OBSERVATION HOURS)

NO OCCURRENCE OF DATA

2200 - 0600 (32877 OBSERVATION HOURS)										
TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361+480
II			1							1
IIIA					1					2
IIIB										2
IIIC										
III + III										
III						1				1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS										
TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361+480
II					.5					.5
IIIA						1.2				1.4
IIIB										
IIIC										
III + III										
III						1.7				1.7

AVERAGE TIME IN EACH DURATION HOURS AND TENTHS										
TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361+480
II					30.0					30.0
IIIA						70.0				42.5
IIIB										
IIIC										
III + III						100.0				100.0
III						70.0				70.0

ALL (87672 OBSERVATION HOURS)										
TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361+480
II			1							1
IIIA					1					2
IIIB										
IIIC										
III + III						1				1
III						1				1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS										
TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361+480
II					.5					.5
IIIA						1.2				1.4
IIIB										
IIIC										
III + III						1.7				1.7
III						1.2				1.2

AVERAGE TIME IN EACH DURATION HOURS AND TENTHS										
TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361+480
II					30.0					30.0
IIIA						70.0				42.5
IIIB										
IIIC										
III + III						100.0				100.0
III						70.0				70.0

LOS ANGELES, INTERNATIONAL
TABLE XV - TEMPERATURE < 33 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND 9-12 KNOTS,
JANUARY 1956 - DECEMBER 1965

NO OCCURRENCE OF DATA

TABLE XVI - TEMPERATURE < 29 DEGREES (F).
0700 - 1300 (25971 OBSERVATION HOURS)

JANUARY 1956 - DECEMBER 1965

NO OCCURRENCE OF DATA

1400 - 2100 (29224 OBSERVATION HOURS)

NO OCCURRENCE OF DATA

FREQUENCY OF OCCURRENCE		TIME IN MINUTES													
		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													1	1	1
IIIA	1												2	2	2
IIIB															
IIIC															
III + III															
III													1	1	1
TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													.3	.3	.3
IIIA													1.2	1.2	1.2
IIIB															
IIIC															
III + III													1.7	1.7	1.7
III													1.2	1.2	1.2
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													30.0	30.0	30.0
IIIA													70.0	42.5	42.5
IIIB															
IIIC															
III + III													100.0	100.0	100.0
III													70.0	70.0	70.0
FREQUENCY OF OCCURRENCE		TIME IN MINUTES													
		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													1	1	1
IIIA	1													2	2
IIIB															
IIIC															
III + III													1	1	1
III													1	1	1
TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													.3	.3	.3
IIIA													1.2	1.2	1.2
IIIB															
IIIC															
III + III													1.7	1.7	1.7
III													1.2	1.2	1.2
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II													30.0	30.0	30.0
IIIA													70.0	42.5	42.5
IIIB															
IIIC															
III + III													100.0	100.0	100.0
III													70.0	70.0	70.0

LOS ANGELES, INTERNATIONAL
TABLE XVII - TEMPERATURE < 29 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND < 9 KNOTS.
0700 - 1300 (29571 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

NO OCCURRENCE OF DATA

1400 - 2100 (29224 OBSERVATION HOURS)

NO OCCURRENCE OF DATA

2200 - 0600 (22277 OBSERVATION HOURS)															
FREQUENCY OF OCCURRENCE		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		1											1		
IIIA	1												2		2
IIIB															
IIIC															
III + III															
III													1	1	1
TOTAL TIME IN EACH DURATION HOURS AND TENTHS															
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		.9											.9		.9
IIIA	.9												1.4		1.4
IIIB															
IIIC															
III + III															
III													1.2	1.7	1.2
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS															
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		30.0											30.0		30.0
IIIA	15.0												42.5		42.5
IIIB															
IIIC															
III + III															
III													70.0	100.0	70.0
FREQUENCY OF OCCURRENCE															ALL (07672 OBSERVATION HOURS)
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		1											1		
IIIA	1												2		2
IIIB															
IIIC															
III + III															
III													1	1	1
TOTAL TIME IN EACH DURATION HOURS AND TENTHS															
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		.9											.9		.9
IIIA	.9												1.4		1.4
IIIB															
IIIC															
III + III															
III													1.2	1.7	1.2
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS															
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		30.0											30.0		30.0
IIIA	15.0												42.5		42.5
IIIB															
IIIC															
III + III															
III													70.0	100.0	70.0

LOS ANGELES, INTERNATIONAL
TABLE XVIII - TEMPERATURE < 29 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND 9-12 KNOTS,
JANUARY 1950 - DECEMBER 1969

NO OCCURRENCE OF DATA

TABLE XIX - TEMPERATURE > 92 DEGREES (F.) LOS ANGELES, INTERNATIONAL
0700 - 1300 (28971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	65	38	26	13	9	3	4			167	7	156
II	43	20	12	5	1	1			82	1	83	
III	29	15	9	2	1				52		52	
IIIA	2	1		1		1			3	1	3	
IIIB	7	12	5	4	3	1	4		35	1	36	
IIIC	11	7	6	3	2	3	1		29	4	33	
III + III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	9.0	14.1	17.7	11.9	9.4	5.6	9.8			97.3	19.3	72.6
II	0.0	1.0	0.5	0.5	1.5	1.9			28.7	1.9	30.6	
III	5.0	6.6	8.0	2.0	1.4				20.7		21.2	
IIIA	1.4	1.0		1.0		1.7			2.2	1.7	3.1	
IIIB	1.1	2.0	2.9	3.4	6.4	1.6	9.7		18.6	11.2	30.0	
IIIC	2.1	2.8	3.7	2.6	2.3	5.3	2.1		19.0	7.6	20.6	
III + III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	1-13	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-300	361-480	481+	1-90
II	9.2	23.3	38.0	52.1	70.3	111.0	146.3			23.4	131.1	20.3
III	11.1	26.2	39.3	56.2	80.0	115.0			21.0	119.0		22.1
IIIA	12.0	25.6	40.1	58.5	85.0				23.8		26.3	
IIIB	11.8	24.7	38.5	58.5	100.0				28.4	100.0		28.8
IIIC	9.1	25.2	34.2	51.0	77.2	93.0	145.3		34.2	134.8	47.6	
III + III	11.6	19.1	37.2	51.3	69.5	110.7	126.0		26.6	114.3	37.5	
III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	6.6	33	18	10	13	6	3			158	7	146
II	47	19	10	7	4	2	1		57		56	
III	35	9	5	7	6	2	3		62	11	73	
IIIA	4	2	2	2	2	1			10	9	19	
IIIB	12.3	15	8	13	15	10	13		64	54	118	
IIIC	23	14	3	6	6	4	2		2	56	33	
III + III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	9.5	12.6	11.7	9.0	16.9	10.5	12.0			59.5	22.5	82.0
II	8.0	7.9	6.7	6.4	4.9	7.0	5.8	4.0		32.7	19.1	46.0
III	7.5	3.6	3.5	6.3	8.4	3.8	7.0			29.1	47.0	79.3
IIIA	7.9	1.2	1.8	2.0	1.8	1.8	0.8	3.8	10.7	8.9	10.5	7.0
IIIB	2.1	0.0	1.8	1.8	1.8	1.8	1.8	2.0	28.8	43.8	28.2	29.3
IIIC	6.4	3.7	1.9	7.4	8.4	10.8	9.4	7.3	35.7	141.7	216.8	244.6
III + III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-300	361-480	481+	1-90
II	8.8	22.8	38.9	53.7	78.2	104.7	144.2			25.9	122.6	33.0
III	10.2	25.0	39.9	56.4	73.0	103.5	145.5	260.0		22.3	130.3	25.8
IIIA	12.9	23.7	36.4	36.0	82.1	103.0	135.0	135.0		28.1	261.5	65.2
IIIB	12.7	27.0	37.3	52.5	75.2	107.8	135.4	198.0	320.0	611.0	630.0	120.5
IIIC	10.2	23.6	37.3	52.5	75.2	104.9	149.0	216.0	292.8	493.0	783.3	40.6
III + III	10.6	24.4	38.3	55.6	83.3	108.0	141.5	228.3	288.7	412.0	706.5	20.8
III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	2.0	23.7	38.8	59.0	72.4	109.2	149.9	199.0	321.3		24.4	168.4
II	11.7	25.6	39.5	55.1	76.0	109.3	149.3	200.0	300.0		23.4	130.0
III	12.7	26.2	41.2	57.2	77.3	110.3	150.8	212.3	300.0		34.6	173.0
IIIA	12.6	27.0	42.1	56.3	77.2	110.0	150.6	211.2	298.8	417.3		34.9
IIIB	11.3	23.9	39.3	53.2	73.6	108.6	147.0	200.8	298.0	417.3	59.1	240.6
IIIC	11.9	25.1	38.9	54.9	73.9	108.8	147.5	214.0	300.7	417.4	632.0	50.1
III + III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	3.1	70.5	72.7	59.3	55.1	49.1	64.0	10.6	11.1	24.0	160.7	401.1
II	61.1	52.7	47.0	29.3	28.9	36.3	20.3	10.6	3.1	31.9	171.3	201.6
III	56.7	47.9	44.6	43.3	70.6	47.8	49.5	50.0	26.7	243.1	266.7	510.7
IIIA	5.6	3.1	10.3	17.1	19.0	20.6	20.0	40.4	13.8	42.7	132.6	173.0
IIIB	10.0	26.9	29.8	39.7	49.4	175.1	187.0	232.7	237.1	306.8	189.3	1250.9
IIIC	10.5	21.2	26.3	61.1	59.5	105.6	94.6	225.9	190.0	192.6	601.8	988.0
III + III												

TIME IN MINUTES										JANUARY 1956 - DECEMBER 1965		
CATEGORY										1-90	91-ALL	I-ALL
I	9.7	23.6	38.6	36.2	73.7	100.3	147.0	196.0	331.7		24.3	161.3
II	11.1	25.3</										

TABLE XX - TEMPERATURE > 32 DEGREES (F) WITH FOG, NO PRECIPITATION, AND WIND < 9 KNOTS.
0700 - 1300 (29571 OBSERVATION HOURS) JANUARY 1958 - DECEMBER 1965

TIME IN MINUTES																													
CATEGORY		1-15		16-30		31-45		46-60		61-90		91-120		121-180		181-240		241-360		361-480		481+		1-90		91-ALL		1-ALL	
II	65	37	27	14	3	2	3	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
IIIA	42	20	11	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
IIIB	22	15	9	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
IIIC	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
II + III	8	13	7	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
III	11	7	6	4	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
TOTAL TIME IN EACH DURATION HOURS AND TENTHS																													
CATEGORY		1-15		16-30		31-45		46-60		61-90		91-120		121-180		181-240		241-360		361-480		481+		1-90		91-ALL		1-ALL	
II	10.3	14.6	17.2	12.2	3.5	4.0	0.8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIA	7.7	8.1	7.1	4.3	1.5	1.9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIB	4.8	6.4	6.0	2.0	1.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIC	1.1	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
II + III	1.5	2.0	1.2	0.4	0.4	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
III	2.1	2.2	4.0	3.3	2.3	3.3	2.1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS																													
CATEGORY		1-15		16-30		31-45		46-60		61-90		91-120		121-180		181-240		241-360		361-480		481+		1-90		91-ALL		1-ALL	
II	9.5	23.4	38.3	32.3	70.3	120.0	136.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIA	11.0	24.2	38.7	36.2	90.0	115.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIB	11.0	25.0	40.1	39.5	82.0	115.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIC	1.1	1.8	2.8	35.7	52.4	76.2	108.0	134.7	207.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
II + III	11.1	23.8	39.3	30.0	69.3	110.7	126.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
III	11.6	19.1	39.3	30.0	69.3	110.7	126.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TIME IN MINUTES																													
CATEGORY		1-15		16-30		31-45		46-60		61-90		91-120		121-180		181-240		241-360		361-480		481+		1-90		91-ALL		1-ALL	
II	6.6	26	17	8	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIA	4.6	17	10	6	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIB	3.4	9	5	7	6	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIC	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
II + III	16	23	7	11	10	8	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
III	25	14	3	7	6	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL TIME IN EACH DURATION HOURS AND TENTHS																													
CATEGORY		1-15		16-30		31-45		46-60		61-90		91-120		121-180		181-240		241-360		361-480		481+		1-90		91-ALL		1-ALL	
II	9.9	13.7	10.8	6.5	10.6	8.7	4.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIA	7.0	7.4	6.7	3.5	6.8	5.2	5.2	4.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIB	7.3	3.6	3.5	6.3	6.4	3.8	7.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIC	.9	1.2	1.8	2.9	1.8	1.8	0.8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
II + III	2.6	9.3	4.5	9.8	12.3	13.9	10.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
III	4.6	5.8	1.9	6.4	8.4	8.8	12.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS																													
CATEGORY		1-15		16-30		31-45		46-60		61-90		91-120		121-180		181-240		241-360		361-480		481+		1-90		91-ALL		1-ALL	
II	9.0	22.0	39.1	35.0	78.3	104.6	129.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIA	10.2	26.2	40.0	34.8	72.3	104.3	134.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIB	12.9	23.7	41.4	34.0	82.7	112.3	139.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IIIC	12.6	23.7	37.3	35.7	86.3	107.3	139.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
II + III	9.9	26.2	38.0	33.0	86.3	104.0	148.4	1	1																				

TABLE XXI - TEMPERATURE > 32 DEGREES (F., WITH FOG, NO PRECIPITATION, AND WIND 9-12 KNOTS.
0700 - 1300 (25571 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	III	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA	2												4	4	
IIIB													2	2	
IIIC													1	1	
II + III	3	1											4	4	
III		1											1	1	
TOTAL TIME IN EACH DURATION HOURS AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	.4	.9											.9	.9	
IIIA	.5												.5	.5	
IIIB															
IIIC		.3											.3	.3	
II + III	.4	.9											.7	.7	
III		.3											.3	.3	
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	7.0	30.0											12.8	12.8	
IIIA	19.0												19.0	19.0	
IIIB															
IIIC		20.0											20.0	20.0	
II + III	7.0	20.0											10.3	10.3	
III		20.0											20.0	20.0	
1400 - 2100 (29224 OBSERVATION HOURS)															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	12	5	4	4									25	25	
IIIA	5	3	1	2									11	11	
IIIB															
IIIC															
II + III	13	8	4	4	1								30	30	
III	4	2	1										7	7	
TOTAL TIME IN EACH DURATION HOURS AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	2.0	1.8	2.7	3.5									10.0	10.0	
IIIA	1.0	1.5	.5	1.0									4.3	4.3	
IIIB															
IIIC															
II + III	2.1	3.2	2.7	3.6	1.1								12.7	12.7	
III	.8	1.0	.9										2.7	2.7	
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	9.8	21.6	40.3	59.0									23.9	23.9	
IIIA	11.8	29.7	51.0	52.5									23.5	23.5	
IIIB															
IIIC															
II + III	9.7	24.0	40.3	54.3	65.0								25.4	25.4	
III	12.0	30.0	59.0										23.3	23.3	
2200 - 0600 (32877 OBSERVATION HOURS)															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	3	3											6	6	
IIIA	2	3		1									6	6	
IIIB	3	2											5	5	
IIIC															
II + III	0	4	1	1	1	1							13	14	
III	4	2	1	1	1	1							8	9	
TOTAL TIME IN EACH DURATION HOURS AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	.6	1.3											1.8	1.8	
IIIA	.4	1.1		1.3									2.7	2.7	
IIIB	.6	1.0											1.6	1.6	
IIIC				1.0									1.0	1.0	
II + III	1.2	1.5	.7	1.0	1.3	1.0							2.7	2.7	
III	.9	.7	.8	1.0	1.0	1.0							3.3	3.1	
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	11.0	29.3											18.2	18.2	
IIIA	12.0	22.7		75.0									27.5	27.5	
IIIB	12.7	30.0											19.6	19.6	
IIIC				60.0									60.0	60.0	
II + III	11.8	23.0	41.0	60.0	75.0	105.0							26.1	31.7	
III	13.3	21.0	45.0	60.0	75.0	105.0							25.0	33.9	
ALL (87672 OBSERVATION HOURS)															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	10	5	4	4									35	35	
IIIA	7	5	1	2	1								16	16	
IIIB	3	2											5	5	
IIIC													2	2	
II + III	22	33	5	5	2	1							47	48	
III	6	5	1	2									16	17	
TOTAL TIME IN EACH DURATION HOURS AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	2.9	3.6	2.7	3.5									12.6	12.6	11.20
IIIA	1.5	2.2	.5	1.0	1.3								6.6	6.6	
IIIB	.6	1.0											1.6	1.6	
IIIC	.3	.3		1.0									1.3	1.3	
II + III	3.6	5.1	3.4	6.6	2.3	1.8							19.0	20.0	
III	1.7	2.0	.8	1.9	1.9	1.9							6.4	6.1	
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS															
CATEGORY		TIME IN MINUTES										1-90 91-ALL 1-ALL			
II	9.5	23.8	40.3	59.0									21.7	21.7	
IIIA	12.9	26.0	31.0	52.5	79.0								24.6	24.6	
IIIB	12.7	30.0											19.6	19.6	
IIIC				60.0									40.0	40.0	
II + III	9.5	23.6	40.4	55.6	70.0	105.0							24.3	26.0	
III	12.5	24.4	49.3	57.5	104.0								23.9	28.7	

<p>UNCLASSIFIED</p> <p>Systems Research and Development Service, Federal Aviation Administration, Washington, D. C., CLIMATOLOGICAL SUMMARIES, VISIBILITIES BELOW 1/2 MILE AND CEILINGS BELOW 200 FEET, BY ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION, FINAL REPORT, June 1969, 41 volumes of 20 pages each. (Contract No. FA-67-WAI-120, Project 197-641-01R, Report No. RD-69-22)</p> <p>Descriptions</p> <p>Climatology All Weather Aviation Landing Systems Fog Dissipation</p> <p>Unclassified Report</p> <p>This report consists of 41 volumes of climatological data for 41 different major airports. Callies, visibility, wind, and weather information are grouped by various periods of the day and by various temperature and wind categories. Various weather and landing system categories are tabulated. In most cases from 10 years of data, as aids for making decisions affecting landing systems and fog dissipation at these 41 air terminals.</p>	<p>UNCLASSIFIED</p> <p>Systems Research and Development Service, Federal Aviation Administration, Washington, D. C., CLIMATOLOGICAL SUMMARIES, VISIBILITIES BELOW 1/2 MILE AND CEILINGS BELOW 200 FEET, BY ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION, FINAL REPORT, June 1969, 41 volumes of 20 pages each. (Contract No. FA-67-WAI-120, Project 197-641-01R, Report No. RD-69-22)</p> <p>Descriptions</p> <p>Climatology All Weather Aviation Landing Systems Fog Dissipation</p> <p>Unclassified Report</p> <p>This report consists of 41 volumes of climatological data for 41 different major airports. Callies, visibility, wind, and weather information are grouped by various periods of the day and by various temperature and wind categories. Various weather and landing system categories are tabulated. In most cases from 10 years of data, as aids for making decisions affecting landing systems and fog dissipation at these 41 air terminals.</p>
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